6: Joseph E-5 (1965-1966) 1975 MX3 Rif MX3

Chapter 2

LIVELIHOOD

243 The primary economic activity in the Central Rif is the cultivation of barley. The agricultural cycle is marked by the [221] planting and harvesting of this crop. Ploughing begins during the months between October and January depending on the occurrence of the first rain which is necessary to soften the soil. [407] Breaking the soil is done by wooden ploughs though the blades are made of metal. The terrain is first weeded and cleared of small rocks by the children of the family. Then the father, an 243 492 older son or a hired man commences the ploughing. Two animals, one on each side of the plough, are used. Mules are preferred, but rarely does a man have two. Thus, there is a bizarre mixture of animals including combinations of donkeys, cows and mules. The value of animals on the market is at its highest in this season since everyone needs them for ploughing.

243 After the land has been ploughed by the animals it is [412] broken even finer by the use of a hand hoe. When the land has been sufficiently prepared, the seed is sown by hand. Once the barley has been planted there is no further care of the fields. The crop is dry farmed and its yield depends entirely on the amount of rainfall it receives during the winter.

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
Jebala MX2

The Agricultural Calendar

Moroccan agriculture is conducted on the basis of the Julian almanac, and the Latin names for the months have passed with but slight changes into Arabic and Berber. In most of northern Morocco the agricultural cycle involves a combination of dry farming, horticulture, and the cultivation of small irrigated plots. Dry farming as practiced in the Mediterranean region is essentially a matter of farming the same land every other year and of tilling it during the fallow period. In this way as much moisture as possible is kept in the ground for the next year. Since few communities can produce enough grain during the alternate seasons to allow for the fallow years, dry farming requires constant clearing of new land.

In the hilly areas of Jbala and Ghmara the beginning of the agricultural year is marked by fires set to clear new fields, and the haze of smoke lingers until the arrival of the first rains. By the end of the summer drought, animals are weakened by the scarcity of feed; and wherever the soil is clayey the drought-hardened surface is difficult to plow. So the farmer waits for the first rains for plowing and the second for seeding. After the soil has been turned, cereals, usually barley or hard wheat, are broadcast. Then the soil is again worked with the plow and, since Moroccans do not use the harrow, clods are broken with clubs or hoes.

In the western half of the northern zone, plowing usually begins toward the end of September, and sowing is completed by the beginning of November. In the eastern sector the first heavy rains may not come until March or April. In this event, no further thought is given to barley or wheat, and a desperate effort is made to prepare the soil for a summer crop of sorghum. When cereals are sown, the feverish activity of autumn gives way to a period of virtual hibernation. Only the women keep busy, for there is always need for fodder and fuel.

In frost-free areas, February marks the beginning of the work of planting, pruning, grafting, and fertilizing the fruit and nut trees. This task continues through March and April. In the lower areas of the Rif the most common trees are the fig, pomegranate, almond, and olive. In the highlands walnuts are most important. Trees are cared for assiduously, for dried figs, raisins, and nuts constitute the principal food reserves after the cereals have been consumed. Since they do not have to be watered, figs and vines usually occupy the higher and steeper slopes. New olive trees are usually obtained by grafting on the oleaster. The olives are often left so long in heaps on the ground that they begin to ferment, and the oil is very rancid when the fruit is eventually pressed.

The arduous task of rebuilding terraces, dams, and ditches begins in March. This work is not yet finished when it is time to begin the harvest of the cereals. The shortage of manpower at this time is offset by the women, who reap the grain with sickles and carry it to threshing floors. There it remains until the men have completed the planting of the summer crops. Then all effort is devoted to threshing and winnowing. This work begins in July and in bountiful years it may still be in progress when the first rains fall. Threshing takes place on communal floors, which may or may not be paved. These are always in an exposed position, and when the mixture of grain and straw is thrown in the air, it is separated

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
Jebala MX2

J 241 171 the gradual decrease in the number of fruit and nut trees. The tribesmen of Jbala and the Atlantic littoral can count on adequate rainfall for a good cereal crop in most years. Moreover, since the summer weather is cooler and more humid than in the interior, crops do not suffer from excessive evaporation. Cereals in winter give way to summer crops of sorghum and chickpeas. The latter are not irrigated, and so there is no need for terracing. Slopes are covered with an irregular patchwork of cultivated plots without walls or ditches. Each hamlet is surrounded by cactus (*Opuntia Ficus-indica*), which is cultivated as a hedge and for its edible fruit.

Farm Implements

R 412 171 The implements used by Moroccan farmers are simple and few, for long-established habit opposes change. There are some general reasons for conservatism, such as the abundance and cheapness of manpower and the stagnation of industry. There are specific reasons as well: the prevalence of steep slopes, of small plots where only handwork is possible, and the difficulty of hauling heavy equipment through mountainous terrain. Implements are limited to mattocks, picks, hatchets, hoes, plows, grist mills, and equipment for pulping and pressing olives. Plowshares and other iron tools are made and repaired by local blacksmiths.

R 407 171 The Moroccan plow is a one-handled implement without wheels, colter, or moldboard. Wings are attached obliquely to either side of the share in order to widen the furrows, though not to reverse the sod. Since there is no harrow, clods are broken with hoes or clubs, and a second plowing is necessary to cover the seed. The share is made from a flat piece of iron hammered over at the edges to form a socket. The plow itself is much the same throughout the northern zone. J [407] [492] The main regional difference is in the manner of yoking. In Jbala plows are fastened to the foreheads of cows or oxen (pl. 4, *b*); neck yoking is practiced elsewhere.[1] Mixed teams are common, combining donkeys, mules, or oxen, or one of these animals with a camel (pl. 4, *b*).

R 412 171 J [412] Figure 21 illustrates the main hand tools. The first four (*a–d*) are digging and weeding tools; the complex tool in the fourth sketch (*d*) seems to be restricted to Jbala, for the Sanhajans and Rifians are unable to give it a name. The fifth sketch (*e*) shows an all-purpose grubbing and cutting tool, which the women use to collect fuel and edible plants. Figure 20, *f*, is the hatchet used by woodcutters in Ktama; 20, *g*, is the ubiquitous sickle.

R 256 171 Milling is ordinarily accomplished with a rotary hand mill consisting of an upper stone, turned with a wooden handle, and a lower stone that remains stationary.[2] In areas of abundant runoff there are also vertical water mills, consisting of a turbine wheel attached to the upper of two millstones, a hopper mounted above the stone, and a feed slot jiggled by the upper stone to ensure an even flow (fig. 22). The lower stone is larger than the upper, and is rimmed with a slightly raised border, broken at one place to allow extraction of the flour.[3] Mills of this

R [113] [1] For other illustrations of Moroccan plows, see E. Laoust, *Mots et choses berbères: notes de linguistique et d'éthnographie* (Paris: Augustin Challamel, 1920), pp. 275–301.

R [113] [2] This type of mill is illustrated in Ernst Rackow, *Beiträge zur Kenntnis der materiellen Kultur Nordwest-Marokkos: Wohnraum, Hausrat, Kostüm* (Wiesbaden: Otto Harrassowitz, 1958), plate 12.

R [113] [3] The origin and evolution of the rotary hand mill and the turbine mill are discussed at length in L. A. Moritz, *Grain-Mills and Flour in Classical Antiquity* (Oxford: Clarendon Press, 1958).

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
Jebala MX2

Mills of this type are usually privately owned, and the owner collects one-tenth of the flour. When there is neither hand nor turbine mill, the women pound the grain with iron bars.

The implements used to press and pulp olives are similar to those used in Roman time.[10] The apparatus consists of a mill, a press, and a vat. The millstone lies against a centrally placed revolving post and is turned by means of a horizontal shaft with one end secured in the center post and the other projecting beyond the stone (fig. 23). Mills are used both for bruising the fruit before pressing and later to pulp the pressed fruit for use as cattle fodder. The larger mills are powered by animals, the smaller by hand. The essential part of the press is a large log, held in place by heavy wooden screws, which is forced down on baskets filled with olive mash.

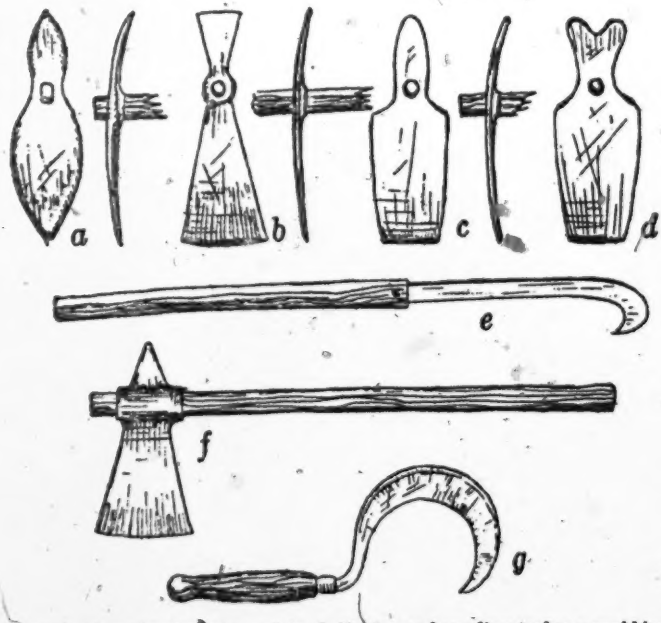

Fig. 21. Farm implements: *a*, *b*, *c*, *d*, digging and weeding tools; *e*, grubbing and cutting tool; *f*, hatchet used by woodcutters; *g*, sickle.

Role of Domestic Animals

In the statistical report of 1953 the number of domestic animals in Spanish Morocco is given as 1,104,000 goats, 661,000 sheep, 337,000 cattle, 55,000 donkeys, 22,000 mules, and 2,000 camels.[11] The number of goats nearly equals that of human beings. They are kept for their meat, milk, and hides. In many areas the number of goats is limited only by the amount of space available for storage of fodder and by the number of goatherds.

[10] H. Camps-Fabrer, *L'Olivier et l'huile dans l'Afrique romaine* (Algiers: Service des Antiquités, 1953).

[11] *Anuario estadístico, 1952–53*, p. 131, cited in note 1.

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
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Fig. 22. Turbine grist mill.

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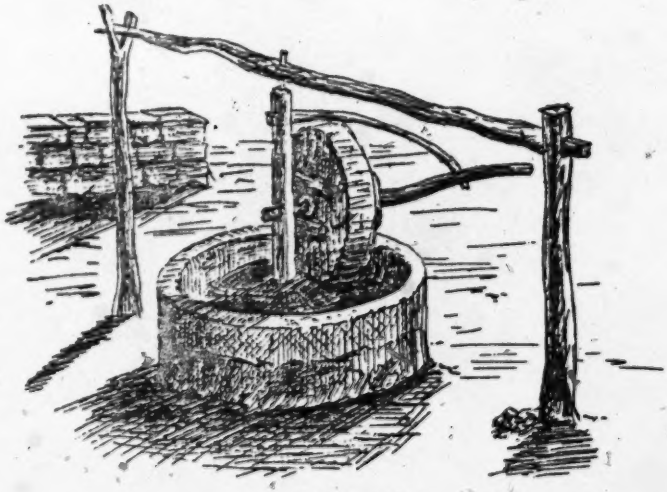

Fig. 23. Olive grinder.

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and by the number of goatherds. The situation in Ktama is representative of the entire highland area. In 1934 this mountain tribe, with a population of 8,389 persons, maintained 20,259 goats in an area of 450 square kilometers.[10] Goats must be brought back to shelter each night; so the radius of their movement is small. The effects of browsing on vegetation will be examined in chapter viii.

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The number of goats decreases toward the Atlantic lowlands and the plains

[10] Figures from an unpublished report of the Spanish *interventor* dated November, 1934.

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
Jebala MX2

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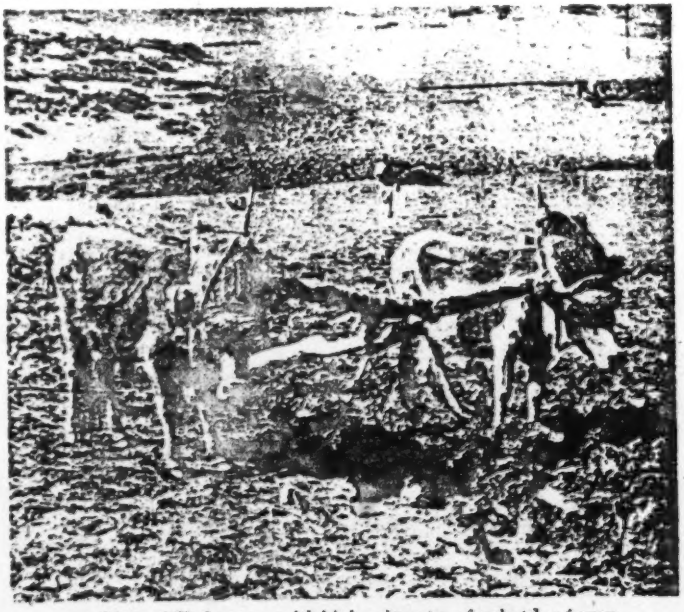

a. Plow of Jbalan type with high yoke set on foreheads of oxen.

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b. Mixed team in Garet.